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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
097059,865	04/14/98	IYER	MICS:0015--2

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EXAMINER
NGUYEN, T

ART UNIT	PAPER NUMBER
2813	

DATE MAILED: 08/03/98

**Please find below and/or attached an Office communication concerning this application or
proceeding.**

Commissioner of Patents and Trademark

Office Action Summary

Application No.
09/059,865

Applicant(s)

Ravi

Examiner

Thanh Nguyen

Group Art Unit

2813

☒ Responsive to communication(s) filed on Apr 14, 1998

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1 and 12-23 is/are pending in the application

Of the above, claim(s) none is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1 and 12-23 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 12-16, 18-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim (U.S. Patent No. 5,466,637).

Kim teaches the silicon spacers (18, figure 1; 22, figure 2) are the same as applicant's non-dielectric stringers (see column 2, lines 50-68 and figures 1A-2B).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 17, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. Patent No. 5,466,637) in view of Matsuoka et al. (U.S. Patent No. 5,391,508).

Kim teaches all of the limitation as describe in claimed invention above except for the nitridation step.

Matsuoka et al teaches that silicon nitride side walls may be used, rather than silicon oxide (see column 16, lines 10-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide silicon nitride side walls in place of oxide side walls in the Kim process as taught by Matsuoka et al because it is known in the art that silicon nitride functions effectively as a side wall and silicon nitride also a better diffusion barrier and etch stop than silicon oxide and therefore it would be a better protection for the gate electrode.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. Patent No. 5,466,637) in view of Ishida (JP 2-114641).

Kim teaches all of the limitation as describe in claimed invention above except for using metal in a gate structure.

Ishida teaches that metals, such as tungsten are known in the art to be used in gate structures (see abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use a metal in the gate structure of Kim as shown by Ishida because it is known in the art to do so and it also would provide for a more conductive gate.

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Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is provisionally rejected under the judicially created doctrine of double patenting over claim 1 of copending Application No. 08/599,675. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: A method for filling spaces between patterned metal features comprising the steps of: coating the patterned metal features with a first material so as to partially fill the spaces between the metal features; and treating the first material at a temperature less than a melting point of the metal features so as to cause the first material to expand to completely fill the partially filled spaces between the metal features.

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Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (703) 308-9439. The examiner can normally be reached on Monday-Thursday from 7:30AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Bowers, can be reached on (703) 308-2417. The fax phone number for this Group is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Thanh Nguyen

July 30, 1998


Charles Bowers
Supervisory Patent Examiner
Technology Center 2800